

**IN THE UNITED STATES DISTRICT COURT FOR THE
EASTERN DISTRICT OF VIRGINIA
Alexandria Division**

SHEHERYAR AHMAD,)	
)	
<i>Plaintiff,</i>)	
)	Civil Action No. 1:24-cv-176 (PTG/IDD)
v.)	
)	
SPINNAKER INSURANCE COMPANY,)	
)	
<i>Defendant.</i>)	

Memorandum Opinion and Order

This matter comes before the Court on Defendant’s request to exclude the expert opinion of Plaintiff’s expert, Dr. Brian Bramel. Dkts. 51, 66.¹ Plaintiff Sheheryar Ahmad has sued Defendant Spinnaker Insurance Co., his insurer, for breach of contract based on Defendant’s refusal to cover damages caused by frozen and burst pipes in Mr. Ahmad’s home. Dkt. 19 (“Am. Compl.”) ¶¶ 4-10. Plaintiff contends that, notwithstanding the insurance policy’s exception to coverage for damage from frozen pipes, his claim is eligible for an exemption that covers damages from frozen pipes where the insured took “reasonable care to maintain heat.” *Id.* ¶ 6.

The issue before the Court is whether the proffered testimony of Plaintiff’s expert witness, Dr. Brian Bramel, regarding the home’s internal temperature at the time of the frozen pipes is admissible under Fed. R. Evid. 702 and *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993). The matter has been fully briefed. Dkts. 51, 56, 57, 66, 67, 69. Following an initial summary judgment hearing in September 2024, the Court reopened discovery for Defendant “to complete discovery reasonably related to the disclosure of Dr. Bramel’s Manual J Calculations.”

¹ Defendant sought to exclude the testimony of Dr. Bramel as part of Defendant’s Motion for Summary Judgment, which it later supplemented. Dkts. 50, 51, 66.

Dkt. 62 at 3. In November 2024, the Court ordered supplemental briefing on any new discovery related to Plaintiff's expert. Dkt. 65. On February 27, 2025, and after the matter was fully briefed, the Court denied Defendant's original motion for summary judgment. Dkt. 71. On May 13, 2025, the Court held a *Daubert* hearing on the matter—during which Dr. Bramel and Defendant's expert, Adam Mills, testified—and took the matter under advisement. Dkt. 88.

For the foregoing reasons, the Court finds that Dr. Bramel's testimony does not satisfy the requirements under *Daubert* and Rule 702. Accordingly, the Court grants Defendant's request to exclude the testimony of Dr. Bramel.

Background

On December 28, 2022, while Plaintiff was six weeks into an extended overseas trip, his home endured substantial flooding after a pipe froze and burst. Am. Compl. ¶ 4; Dkt. 51-3 ("Ahmad Depo.") 6:11-13. At the time of the incident, Plaintiff had coverage under a homeowner's insurance policy issued by Defendant ("Policy"). Am. Compl. ¶ 6. The Policy covered "direct physical loss" to a dwelling but excluded coverage for losses caused by "[f]reezing of a plumbing" or HVAC systems (the "Frozen Pipes Exclusion"). *Id.* It further provided an exemption from the Frozen Pipes Exclusion where an insured "used reasonable care to: (a) [m]aintain heat in the 'building'; or (b) [s]hut off the water supply and drain all systems and appliances of water." *Id.*

Defendant denied Plaintiff's claim for coverage under the Frozen Pipes Exclusion. *Id.* ¶¶ 9-10. Plaintiff, however, contends that he is eligible for coverage under the exemption for reasonable care to maintain heat. *Id.* ¶¶ 8-9. During discovery, Plaintiff averred he "did not change the temperature of the thermostat from its normal set temperature before leaving, nor did he instruct anyone to change it." Dkt. 51-1 (Pl.'s Resp. to Interrog. No. 20). In addition to his own testimony,

Plaintiff intends to rely on expert testimony and gas billing statements to determine that the total amount of natural gas consumed during the subject period “is well within the range to maintain sufficient and appropriate heat.” *Id.* (Pl.’s Resp. to Interrog. No. 14).

Plaintiff’s home consumed seven thermal units (“therms”) of natural gas between December 14, 2022 and January 14, 2023, the period during which the pipes froze and burst. Dkt. 56-8 (“Bramel Report”) at 7. To establish that seven therms sufficed to maintain reasonable heat, Plaintiff relies on the expert testimony of Dr. Brian Bramel. Dkt. 51 at 7. Dr. Bramel is a principal at his own engineering firm and holds undergraduate and graduate degrees in Mechanical and Civil Engineering. Bramel Report at 3. Dr. Bramel’s report applies the Manual J calculation, a standard thermodynamics methodology generally used to size heating equipment and developed by the Air Conditioning Contractors of America (ACCA) and the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). *Id.* at 8. In its ordinary function for equipment sizing, Manual J is used to “determine the therms necessary in order to reach a chosen temperature inside a structure.” Dkt. 56-5, Affidavit of Dr. Bramel (“Bramel Aff.”) ¶ 5. However, per Dr. Bramel, the methodology can be used “in reverse,” using basic algebra, to determine the interior temperature based on measurements of the “features of the subject premises” and total energy used in this context. *Id.* ¶¶ 11, 14.

Dr. Bramel’s Application of the Manual J Calculation

The Manual J calculation determines “the energy required for [a] house based on the interior and exterior temperature differences.” *Id.* ¶ 19. A key element of the calculation is the “resistance factor” of the structural elements in Plaintiff’s home, which refers to the energy lost through the walls, floor, roof, and windows. *Id.* ¶¶ 17, 19. Under the equation, the total “energy input to the building from the gas and electric” is equal to the “thermal resistance of the assembly”

multiplied by the “area” of the resistance and the difference between the outdoor and indoor temperatures. *Id.* ¶ 19. Dr. Bramel summarized the equation as follows: $Q_{in} = U A (t_{inside} - t_{outside})$, where Q_{in} refers to the “energy input to the building from the gas and electric,” U refers to “thermal resistance of the [structural] assembly,” A refers to “area” of the resistance, and $(t_{inside} - t_{outside})$ refers to the temperatures inside and outside, respectively. *Id.* Accordingly, Dr. Bramel applied the known variables of energy input (Q_{in}), outside temperature ($t_{outside}$), and “the building properties from the ACCA Manual J procedure”² to then determine the interior temperature (t_{inside}) through the equation. *Id.* His report concludes:

Utilizing manual J with an internal thermostat temperature of 50°F and internal gains of 0.7 KWH the required therms for the December time period is 7.1 therms, as recorded. To within an engineering degree of certainty, the interior thermostat was set to 50°F.

Dkt. 56-8 at 8. In developing his assumptions, Dr. Bramel first determined the total energy input (Q_{in}), or heat produced, based on Plaintiff’s gas bill from December 14 to December 28, 2022. Dkt. 66-1 (“2d Bramel Dep.”) at 19:2-4. Because Manual J lists energy input in British thermal units (BTUs), Dr. Bramel converted the known seven therms of energy usage during the relevant period to BTUs, resulting in a total of 700,000 BTUs, or an average of 2,243.59 BTUs per hour during the 13 days of the billing period. *Id.* at 33:2-34:9.

Dr. Bramel then assumed an additional 2,400 BTUs per hour toward the total energy input for “internal gains,” referring to the “amount of heat added to a home by occupants, through body heat, cooking, use of space heaters,” and other appliances using power. Dkt. 66 at 3; 2d Bramel

² Manual J lists “construction components” to consider, including windows and glass doors, skylights, wood and metal doors, above grade walls, partition walls, below grade walls, ceilings, partition ceilings, passive floors, exposed floors, slab floors, basement floors, partition floors, and ventilation. Dkt. 56-5 ¶ 20 (screenshot of Manual J spreadsheet).

Dep. at 45:11-21. Typically, internal gains are not included in the Manual J calculations because, according to Dr. Bramel, the process of sizing equipment does not generally consider internal gains. *Id.* In his deposition, Dr. Bramel testified that his internal gains estimate was a “reasonable guess” based on an “engineering assumption.” 2d Bramel Dep. at 46:2-8 (“A: It was just a reasonable guess. That’s all it is is a guess. Q: Is there any basis for that guess? A: It’s not outrageous. I mean, it’s an engineering assumption.”), 47:16-20 (“Q: What are other assumptions you could have picked for that number? A: You could select all kind of numbers from an engineering standpoint. That’s the number I chose.”).

Next, Dr. Bramel applied an outdoor temperature value of 33 degrees Fahrenheit for $t_{outside}$. Bramel Aff. ¶ 19 (screenshot of Manual J spreadsheet). Manual J accounts for the outdoor temperature through the variable “99 percent DB,” or “outdoor dry-bulb temperature.” *Id.* The calculation generates location-specific preset values of the “99 percent DB.” 2d Bramel Dep. at 13:13-17. The closest pre-populated city to Manassas, Virginia in Manual J is Fredericksburg, Virginia, for which the default preset outside temperature is 14 degrees Fahrenheit. *Id.* at 13:13-17, 14:13-19; *see also* 2d Mills Decl. at 293 (App’x E) (stating value for “Outdoor design 99% db” comes from “Table 1A,” which includes preset values based on locations) (citing excerpt of Manual J). However, instead of using this value, Dr. Bramel manually adjusted the value to be 33 degrees Fahrenheit. Bramel Aff. ¶ 19 (spreadsheet).

With respect to the construction components, Dr. Bramel assumed Plaintiff’s house includes 12 square feet of windows and glass doors, 72 square feet of wood and metal doors, a rating of “tight” for infiltration (referring to how sealed the structure is), and “100 percent efficiency” for the heating system. *Id.*

Finally, Dr. Bramel inputted his assumptions into the “Form J1 Abridged Version of Manual J, 8th Edition,” a multi-page spreadsheet model of Manual J. *Id.* The ACCA guidelines state that the abridged version applies to particular types of residential applications, including those with a “dark shingle roof,” “wood-frame or block (concrete or cinder) walls,” “no large skylights,” “equitably distributed” windows and glass doors, and heating “provided by a hot air system or electric baseboard heat.” Dkt. 51-8 at 2.

Legal Standard

A jury may only hear expert testimony if it is based on “scientific, technical, or other specialized knowledge [that] will help the trier of fact to understand the evidence or determine a fact in issue.” Fed. R. Evid. 702(a). Rule 702 requires a court to determine that expert testimony is both relevant and reliable. *Id.*; *Daubert*, 509 U.S. at 590 (“This condition goes primarily to relevance.”). Federal Rule of Evidence 401 provides that evidence is relevant if “it has any tendency to make a fact more or less probable than it would be without the evidence” and “the fact is of consequence in determining the action.” Fed. R. Evid. 401. “Under Rule 702, an expert’s testimony is relevant if it has ‘a valid scientific connection to the pertinent inquiry.’” *Belville v. Ford Motor Co.*, 919 F.3d 224, 232 (4th Cir. 2019) (citing *Daubert*, 509 U.S. at 592).

Furthermore, to be reliable, the testimony “must be based on scientific, technical, or other specialized *knowledge* and not on belief or speculation, and inferences must be derived using scientific or other valid methods.” *Oglesby v. Gen. Motors Corp.*, 190 F.3d 244, 250 (4th Cir. 1999). To be admissible, expert testimony must be “based on sufficient facts or data” and “the product of reliable principles and methods[.]” and the expert must “reliably appl[y] the principles and methods to the facts of the case.” Fed. R. Evid. 702(b)-(d). The trial court judge, in a “gatekeeping role,” must ensure “that an expert’s testimony both rests on a reliable foundation and

is relevant to the task at hand.” *Daubert*, 509 U.S. at 597. The party proffering expert testimony bears the burden of establishing that such testimony is sufficiently reliable by a preponderance of the evidence. *Id.* at 592 n.10 (citing Fed. R. Evid. 104(a)).

Daubert provides several factors “that a trial court *may* consider” to “help determine [the] testimony’s reliability.” *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 141 (1999). The *Daubert* factors include: (1) whether a theory or technique “can be (and has been) tested”; (2) “whether the theory or technique has been subjected to peer review and publication”; (3) “the known or potential rate of error”; and (4) “general acceptance[.]” *Daubert*, 509 U.S. at 593-95. *Daubert* expressly grants courts “broad latitude” to assess the admissibility of expert evidence, in order “to protect juries from being swayed by dubious scientific testimony.” *Nease v. Ford Motor Co.*, 848 F.3d 219, 231 (4th Cir. 2017) (quoting *In re Zurn Pex Plumbing Prods. Liab. Litig.*, 644 F.3d 604, 613 (8th Cir. 2011)). Accordingly, the *Daubert* factors are not a “definitive checklist.” *Kumho*, 526 U.S. at 150.

When evaluating expert opinions, “courts may not evaluate the expert witness’ conclusion itself, but only the opinion’s underlying methodology.” *Bresler v. Wilmington Tr. Co.*, 855 F.3d 178, 195 (4th Cir. 2017). “[Q]uestions regarding the factual underpinnings of the [expert witness’] opinion affect the weight and credibility’ of the witness’ assessment, ‘not its admissibility.’” *Id.* (quoting *Structural Polymer Grp. v. Zoltek Corp.*, 543 F.3d 987, 997 (8th Cir. 2008)). However, the Fourth Circuit has said that a court “abandon[s] its gatekeeping function” when it dismisses every argument in a *Daubert* inquiry as “go[ing] to the weight, not admissibility,” because doing so impermissibly would delegate the gatekeeping function to the jury. *Nease*, 848 F.3d at 230.

Discussion

The central dispute here concerns the reliability of Dr. Bramel's methodology and application of that methodology to this analysis. Accordingly, the Court first begins with a determination of whether, under *Daubert*, Dr. Bramel's report uses "reliable principles and methods" when applying the Manual J calculation "in reverse" for a different inquiry than the one it was created for. The Court will then address whether Dr. Bramel reliably applies that methodology to the facts of this case.

Reliability of Dr. Bramel's Methodology

Chiefly, Defendant argues that Dr. Bramel's testimony should be excluded because he improperly "transposed" a pre-existing methodology for sizing heating equipment to a "different area of inquiry." Dkt. 51 at 14. Plaintiff contends that Manual J is appropriate here because it was developed by the ACCA "as an industry standard equation for calculation of the relationship between therm usage and temperature." Dkt. 67 at 10. Dr. Bramel describes the calculation as "basic algebra" and asserts that he can determine the interior temperature by working "backwards." Bramel Aff. ¶ 14; 2d Bramel Dep. at 18:7-11, 179:3-21. Upon review of Dr. Bramel's report, the parties' briefing, and the evidentiary hearing, the Court finds that Dr. Bramel's testimony rests on unreliable principles and methods.

At the outset, Dr. Bramel's methodology is not "generally accepted." *Daubert*, 509 U.S. at 593-94. It is not disputed that Manual J is appropriate for sizing equipment. However, Plaintiff has not demonstrated that it is appropriate to apply Manual J to a non-sizing context, much less apply it "backwards" to determine the internal temperature. Dr. Bramel conceded as much during his deposition and in-court testimony when he stated that he had not seen scientific or engineering papers supporting the use of performing the calculation in reverse. 2d Bramel Dep. at 179:3-16.

Per Dr. Bramel, the methodology is reliable because it applies basic algebra to a standard thermodynamics calculation. However, the fact that Dr. Bramel altered the Manual J calculation for this context undermines his argument that his method is a matter of standard thermodynamics and algebra. For example, while Manual J does not ordinarily account for “internal gains” for heating, Dr. Bramel nevertheless considered it as a variable here. 2d Bramel Dep. at 25:2-7. Dr. Bramel cannot attribute the reliability of his methodology to “basic algebra” of a standard thermodynamics equation while unilaterally changing that underlying equation.

Dr. Bramel’s hypothesis is, furthermore, both untested and, by his own admission, untestable. *Daubert*, 509 U.S. at 593-94 (“[A] key question to be answered in determining whether a theory or technique is scientific knowledge that will assist the trier of fact will be whether it can be (and has been) tested.”). For one, Plaintiff provides no evidence demonstrating that Dr. Bramel’s hypothesis has been tested. At the evidentiary hearing, when asked to address whether his method had been tested, Dr. Bramel simply responded that it was a valid method. Moreover, Dr. Bramel has conceded that the total “internal gains” is unable to be tested, given it is based on “a reasonable guess” on an “engineering assumption.” 2d Bramel Dep. at 46:2-8, 48:1. If the Court, or any other experts, cannot test a critical assumption in Dr. Bramel’s methodology, then there is no “objective basis” to test the reliability of the methodology overall. *See Sardis v. Overhead Door Corp.*, 10 F.4th 268, 292 (4th Cir. 2021). This is especially the case where the “internal gains” assumption comprises over 50% of the total energy input and is ordinarily unaccounted for in Manual J.

While the absence of peer review is not dispositive under *Daubert*, there must be some indicia of reliability for testimony to satisfy *Daubert*. *Nease*, 848 F.3d at 219, 229. “Without testing, supporting literature in the pertinent field, peer reviewed publications[,] or some basis to

assess the level of reliability, expert opinion testimony can easily, but improperly, devolve into nothing more than proclaiming an opinion is true ‘because I say so.’” *Sardis*, 10 F.4th at 292 (quoting *Small v. WellDyne, Inc.*, 927 F.3d 169, 177 (4th Cir. 2019)). Here, Plaintiff has demonstrated no signs of reliability. Nor does Plaintiff point to any “countervailing factors operating in favor of admissibility which could outweigh those identified in *Daubert*.” *Kumho*, 526 U.S. at 156. Accordingly, the Court finds that Dr. Bramel’s reliance on an untested and novel theory contravenes Rule 702 and *Daubert*.

Application of Methodology to the Facts

The Court further concludes that Dr. Bramel’s analysis fails to reliably apply his methodology to the facts here. An expert must “employ[] in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field.” *Kumho*, 526 U.S. at 152.

As a preliminary matter, the Court must be cautious not to confuse the issue of admissibility with the issue of the weight to be applied to testimony. *Hetrick v. IINK, Co.*, No. 1:23-cv-961, 2024 WL 4206788, at *4 (E.D. Va. Sept. 16, 2024); *Nease*, 848 F.3d at 229 (“As with all other admissible evidence, expert testimony is subject to being tested by ‘[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof.’” (quoting *Daubert*, 509 U.S. at 596)). At several points, Plaintiff disputes Defendant’s challenges to Dr. Bramel’s analysis on the basis that they go to the weight, not the admissibility, of the testimony. Dkt. 67 at 13-16. Accordingly, the Court underscores that its “purpose here is not to decide the right calculation [of assumptions], but rather to determine whether the expert uses sufficient facts and data” and reliably applies the methodology to the facts here. *Hetrick*, 2024 WL 4206788, at

*4. Therefore, insofar as Defendant “disagree[s] with the values” selected by Dr. Bramel, that would go to the weight of evidence. *Bresler*, 855 F.3d at 195.

That being said, the Court may assess the methodology underlying Dr. Bramel’s assumptions to determine whether he applied Manual J in a reliable and intellectually rigorous manner. *Id.* On that point, the Court finds that Dr. Bramel’s application of Manual J does not meet the standards of reliability under *Daubert* or Rule 702. Several examples of inconsistent and unsupported assumptions that undermine the testimony’s reliability are outlined below.

First, Dr. Bramel fails to state a sound or consistent reason for overriding Manual J’s preset value of 14 degrees Fahrenheit for the outdoor temperature. At the outset, Dr. Bramel could not properly articulate his understanding of the “outdoor 99% db” variable in Manual J. In his deposition, he spent over ten pages of the transcript attempting to provide some answer to Defendant’s counsel. 2d Bramel Dep. at 49:10-60:3. Despite a demonstrated lack of understanding of the variable, Dr. Bramel nevertheless overrode it for his own value of 33 degrees Fahrenheit. Bramel Aff. ¶ 19. However, he could not adequately explain his reasoning for the manual override. Between Plaintiff’s briefing, Dr. Bramel’s deposition testimony, and the in-court testimony, he set forth over three different explanations. Plaintiff’s supplemental brief asserts that “Dr. Bramel input a temperature that was actually representative of the period of time in question.” Dkt. 67 at 14. In his deposition, Dr. Bramel testified that he overrode the 14 degrees Fahrenheit preset value to be 33 degrees Fahrenheit because it “was built into the [building] code.” 2d Bramel Dep. at 8:20-21. In subsequent deposition testimony, Dr. Bramel admitted he needed to change his testimony and claimed he overrode the preset values because they did not account for “heating degree days” (HDDs). *Id.* at 13-16. As it appeared later, Dr. Bramel agreed that his decision to change the “outdoor 99% db variable” was based on “trial and error” by adjusting the “temperature

end number until you get someplace on the spreadsheet shows [sic] you that number of therms going out.” *Id.* at 19:2-11. Notably, that Dr. Bramel had to “break one of [the] links” of the spreadsheet to adjust the preset outdoor temperature, with no stated justifications, evinces his unreliable application of Manual J here. *Id.* at 16:15-21.

Second, Dr. Bramel’s report offers neither a rationale for considering the additional variable of “internal gains” in his calculation nor an explanation of how he reached his ultimate assumed value. According to Plaintiff’s supplemental brief, Dr. Bramel’s assumption for the 2,400 BTUs in internal gains constitutes “an engineering assumption based on his analysis and experience.” Dkt. 67 at 16. In his deposition, Dr. Bramel conceded that the internal gains assumption was merely a “guess.” 2d Bramel Dep. at 45:21-46:5; *see Kumho*, 526 U.S. at 154-55 (finding lack of reliability where expert could not say “with any certainty” his conclusion). At the hearing, however, Dr. Bramel acknowledged that he relied on the recommended value for internal gains under Manual J—despite having previously stated that Manual J does not consider internal gains for heating. *See* 2d Bramel Dep. at 24:1-18 (explaining why internal gains are not accounted for in Manual J).

Third, Dr. Bramel’s assumptions about the structure of Plaintiff’s home run contrary to the facts. For example, Dr. Bramel rates Plaintiff’s home as “tight,” which is defined in Manual J as a structure “sealed by meticulous workmanship” with the “lowest level of air leakage.” *See* 2d Mills Decl. ¶ 18 (Manual J definitions). Dr. Bramel’s basis for this assumption stems from photographs of the house, demonstrating that “the finishes were in very good shape.” 2d Bramel Dep. at 129:1-9. However, as Dr. Bramel explained in his deposition and at the hearing, industry practice for determining the “tightness” of a house uses “blower tests.” *Id.* Dr. Bramel used no such test here.


Furthermore, Dr. Bramel's analysis assumes Plaintiff's home comprises one window, despite both photographs and inspections "revealing the house had 10 times that many windows." Dkt. 69 at 14. At the hearing, Dr. Bramel justified this inconsistency as an attempt to correct for "solar gain," or the internal heat gained from the sun. However, Dr. Bramel made no consideration for potential heat loss from windows. On the Court's question about whether underestimating the total surface area of windows could also understate the total heat loss from those windows, Dr. Bramel could not provide a definitive answer. Rather than further investigating the matter for accuracy, he stated he had decided to disregard heat loss from windows entirely. It strains credulity that the total heat lost from windows would be less than the heat gained from the sun in the middle of December winter. Nor does Dr. Bramel provide a modicum of evidence in support.

The instances discussed thus far lay bare "[t]he sheer number of mistakes and omissions in [the expert's] analysis [that] render[] it 'outside the range where experts might reasonably differ.'" *EEOC v. Freeman*, 778 F.3d 463, 467 (4th Cir. 2015) (citing *Kumho*, 526 U.S. at 153). Therefore, while the Court could continue onto the numerous other examples of unsound and inconsistent assumptions, it finds no need to proceed any further. As Defendant aptly states, these are not mere "differences of opinions" and "immaterial mistakes." Dkt. 69 at 14 (internal quotation marks omitted). Rather, the cumulation of errors, inconsistencies, and absence of support render Dr. Bramel's analysis entirely unreliable under Rule 702.

Accordingly, for the reasons stated, the Court finds Dr. Bramel's expert testimony to be inadmissible and, therefore, excluded. For the reasons set forth in this memorandum, it is hereby

ORDERED that Defendant's request to exclude Plaintiff's expert opinion is **GRANTED**.

Entered this 20th day of June, 2025.
Alexandria, Virginia.



Patricia Tolliver Giles
United States District Judge